

## BIPOLAR TRANSISTOR WITH LATTICE MATCHED BASE LAYER

### ABSTRACT OF THE DISCLOSURE

5 A semiconductor material which has a high carbon dopant concentration and is composed of gallium, indium, arsenic and nitrogen is disclosed. The material is useful in forming the base layer of gallium arsenide based heterojunction bipolar transistors because it can be lattice matched to gallium arsenide by controlling the concentration of indium and nitrogen. The disclosed semiconductor materials have a low sheet resistivity because of the high carbon dopant concentration obtained.